

End-Users' Forum: Identifying the end points

Chair: Alison Vipond, DETR

- What actual parameters are we going to look at?
- What are the chemical parameters?
- What are the targets?

Functioning of the ecosystem:

Biodiversity ecological status

Habitats Directive } All plans need to be brought together

Biodiversity Plans }

- Has to be a two-way thing. What is feasible?

Keith Bull:

- Users need to identify what ecosystems need predicting.
- Assess critical loads and then see what damage there will be.
- Should we explore what individual countries had exceedances of critical loads.
- Implications – damage to fish populations etc.
- Could we afford to be more precise but critical loads are very crude using a single no.

Max Posch:

- Link between biota and chemistry. End-users do not always know that the critical loads have been calculated

Keith Bull:

- We should re-interpret what we have done in the past and make a presentation to the end-users and policy makers. What the reality is and what work needs to be done.

Alan Jenkins:

- Instead of mapping exceedances we could show what happens if one increases or decreases it.
- With regard to re-interpretation of critical loads, because maps are for the future it is difficult to relate exceedances in 2010 with surface water chemistry etc. The MAGIC model does include what time this will happen, but it does not necessarily happen with other models.

Max Posch:

- Critical loads – every country decides what it wants to protect. Then find linkage and deposition.
- Countries do not have to identify why they have chosen a specific thing.

Steinar Sandoy:

- What we want to know are the consequences to the ecology?

Hartmut Barth:

- What type of ecosystem would you like to get? Should it be pre-industrial? It should be realistic to current situations. It is very difficult to get a pristine situation.
- How are we defining reference conditions?

Bob Ferrier:

- What target for recovery might not possible?

Max Posch:

- This would be impossible in the Netherlands as the country is artificial.

Dick Wright:

- Wanted to know how we were going to illustrate each country's research by using dynamic models? Will we use critical load maps? Critical loads have been established.

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Keith Bull:

- Thought we were obliged to use those maps in our research. He thought we should be using something more realistic alongside it. This could be useful to explain to the decision makers if they want to improve on the flow reactions which are taking place in the environment.
- The critical loads concept will not change.

Max Posch:

- Critical load numbers might well change as people come up with better relationships. Or there may be a shift of what people want to predict – the emphasis on what we protect may change.
- Dynamic models expand the critical loads and how long things would take to recover.

Chris Evans:

- Reminded everyone that most countries do not have data on freshwater critical loads.

Keith Bull:

- If we focused more on freshwater critical loads it would help predict the environment generally and countries should be encouraged to create freshwater critical loads.

Targets

Steinar Sandoy:

- We should agree on what the estimate goal for RECOVER is? We do not necessarily have to go back to pristine conditions. He wondered if salmon was a good indicator as it is a sensitive organism. What is the ultimate goal for ecology in freshwater systems.

Alison Vipond:

- Did not think there should be just one goal – there should be many. What is feasible? What information could we get from the models and timescales? Do we want to get chemical conditions back or the richness of the species back again? We need to know what timescales are involved.

Alan Jenkins:

- The framework was 2016 as the target.

Alison Vipond:

- Thought we may have to tailor goals to be feasible.

Steinar Sandoy

- Suggested we see how far we would be from the goal in 2010.

Keith Bull:

- Thought there should be some indication of where we would be at a specific time. Difficult for people to imagine what the situation would be in 50 years' time.

Alison Vipond:

- Thought studies should not be too far in the future so we maintain motivation.

Chris Evans showed a slide for the next 1000 years. Improvement is good to begin with but it cannot be maintained.

Christine Alewell:

- Suggested we should identify the parameters regions by region as there are so many different goals.

Alan Jenkins:

- Pointed out that those regions are largely political.

Steinar Sandoy:

- Thought pristine conditions would be possible in Nordic regions.

Keith Bull:

- The UK have used $ANC = 0$ for brown trout but brown trout are not necessarily applicable to other countries.

Alison Vipond:

- They were interested in a range of indicators. Different scenarios in different situations. We should not just stick to brown trout.

Ross Doughty:

- He would find it difficult to differentiate between scientists and policy makers. If we used salmon it depends on the marine life too. We need to predict ecosystems of high conservation value. We should use the most sensitive indicator in each region but difficult to accomplish.

Dick Wright:

- Asked for some examples.

Ross Doughty:

- Brown trout, mayflies
- Indicator organisms sensitive to acidification

Dick Wright:

- Does not think diatoms could help us.

Steinar Sandoy:

- Water Directive shows different things as indicators for acidification of macrophytes, macro-invertebrates, phytoplankton.

Alison Vipond:

- The dynamic model will work out the parameter ANC and the biology will be tagged on at the end.

Dick Wright:

- There will be scope to change one's mind quite a bit but in practice it would be best to know what the ANC figure is.
- If we decide on a special mayfly then we should get chemical dose relationship as soon as possible.

Christine Alewell:

- Difficult to identify whether diatoms are important for the ecological status of a lake.

Dick Wright/Max Posch:

- Thought they were but others not so sure.

Jochem Bittersohl:

- In Germany fisheries are not so important. For Germany they want a good ecological status.

Ross Doughty:

- SEPA had a good status for all the things mentioned.

Alan Jenkins:

- How do you define the pre-acidification conditions in any country? If you wish to get back to pre-acidification, how do you know what this is?

Harmut Barth:

- There are no methods of finding out what conditions used to be.

Henning Meesenburg(?):

- Made point that much of their water is used for drinking water in areas which are forested and was probably acidified. The critical for drinking water should be trusted.

Filip Moldan:

- Showed an overhead including many different conditions over the last 1000 years. So which condition does one use?

Hartmut Barth:

About 200 years.

Steinar Sandoy:

- Pristine water was not good enough to drink.

Christine Alewell:

- Suggested the lowland forested rivers used for drinking water be taken.

Anything with a chemical criteria is not a problem. Other things are different.

Joseph Vesely:

- Sites in Czechoslovakia covered 20,000 hectares. There was acidification in the forests.

Hartmut Barth:

- How a water quality should fill the requirements of existing EU legislation?
- If the country (ie Czechoslovakia) became a member of the EU then it would have to comply with water quality legislation and it would take Czechoslovakia 20 years to reach the level of the regulatins.

Christine Alewell:

- A drinking water policy would be one target and good quality water everywhere in the Czech Republic.

Dick Wright:

- Thought it would be a good suggestion to use brown trout in Czech Republic. Thought we should have some biological target.

Filip Moldan:

- Did not think that acidification was a problem for Czechoslovakia but that they had a problem with nitrates.

Dick Wright:

- Thought brown trout was the best thing to use. What sort of risk could we expect? Which ANC on fish curve?
- Have data for invertebrates but there will be a problem with data for macrophytes.

Alison Vipond summed up:

Targets

Survivable – 10 or 20 ANC

Reproducible to survive – ANC 0 20 (threshold) 50

Brown trout

Invertebrates

Macrophytes – bit uncertain

Chemical criteria (Germany/Czechoslovakia)

Bob Ferrier:

- Thought that the above was deliverable.

Dick Wright:

- Some scientists should put together a dose report for what we use.

Bob Ferrier:

- We would send minutes of meeting to end-users so that we can confirm chemical criteria for each country. This would be put on a web site.
- This was one of the deliverables (WP07)
- We would produce a summary of meeting asking for feedback.
- Ask participants to contact end-users.

What products do the End-Users require from RECOVER 2010

Chair: Max Posch, RIVM

- SEPA links its needs with Water Framework Directive. When and where would active intervention be required to achieve good status?
- When will recover occur – agreed protocol/scenarios.
- Timing 2010/2016.
- Will we be able to make predictions for individual catchments?

Keith Bull:

- We would need a common link across all the countries and a common interest for action. If one finds a common interest then everyone benefits and are more keen to participate.

Dick Wright:

- Norway has a good representative sample of lakes.
- We were not going to produce maps for Europe.
- Rivers were slightly difficult in Norway.
- We were only proposing to do lakes in RECOVER project in Norway.
- -There is no reason not to choose rivers. Just that data for the lakes is better than rivers.

Alison Vipond:

- Would like to see the spatial maps being fed into an integrated assessment model and catchment (region)/dot (EU scale).
- Would like to have a time series.
- We map the chemistry and then we get the biology.
- Scenarios – modelling
- Good maps show status
- We would want to find the route by which to reach it.
- Need to specify time and action. How can we do that?

Bob Ferrier:

- Suggested we produce time maps (target load maps).

Alison Vipond:

- Have to differentiate between liming and recovery. If liming works then maybe policy makers will not worry about reducing emissions – it is cheaper to do liming but that would be changing the composition so not a good long-term solution.
- Liming is included as a part of the recovery assessment but not as a general option – just an exploratory proposal.

Dick Wright:

- Asked if there was a web site, would it be used and would there be a web site for end-users?

Christine Alewell:

- When would this web site be available? It was hoped straightaway.

Bob Ferrier:

- Said it would contain a description of the work. We would have sites, what information is available from the sites etc. It could contain the overheads shown earlier.
- Suggested results be put on the web site for end-users with an invitation for them to make comments.

Aldo Marchetto:

- Italian end-users were unable to attend meeting. They would like some text on a web site.
- They would like feedback from the meeting and the project generally.

Bob Ferrier:

- Suggested ideas and meeting notes are circulated with a deadline for comments and general information on a web page.
- We would not produce a glossy brochure at the end.
- Thought these were expensive and not good value for money.

Harmut Barth:

- Reported the EU found these glossy brochures very good for publicity. The EU would be glad to have a one-page handout.

Wolfgang Schopp:

- Suggested it could be produced in 'pdf' format.

Alison Vipond:

- Suggested a short summary document (Executive Summary) which could be handed out at meetings and conferences.

- There will probably be something at the end but the question is whether we want to produce something before then.

Bob Ferrier:

- Suggested sending Hartmut Barth an electronic copy of what is available already for his advice on whether it is sufficient for the purpose for the time being.

Rachel Helliwell:

- Suggested a web page describing the project summary and objectives of where the sites are.

Consortium Feedback and Discussion

Priorities:

Fish:

- For all the regional populations (fish) we are going to use ANC 0 20 50.
- We are also going to target load calculation ANC 0 20 50 against a target year.

Time maps:

- How long does it take to reach ANC?

Invertebrates:

- Continuous function – will use what it is ‘1’, fixed for all regions.

Macrophytes:

Dick Wright and Steinar Sandoy will discuss – is there enough information to use?

Chemical criteria:

Need to clarify thresholds.

Dick Wright will annotate text when it is circulated.

Thresholds:

Drinking water – published in books – Alan Jenkins will produce. (There are books with European standards, WHO standards etc etc).

Need to find nitrate, pH and aluminium.

Products:

Catchment maps – need to know boundaries – okay for UK sites; Norway’s catchments are not digitised (they are too small).

Percentage of critical load exceedances.

Bob Ferrier/Rachel Helliwell:

Will get a web site on board.

Bob Ferrier:

Will send a copy of Powerpoint presentation to Hartmut Barth.

Will produce a one page project summary.

Dick Wright:

- Long time between response and recovery.
- Asked for help for information but would provide the conclusion on recovery. He would try and prepare a literature list.